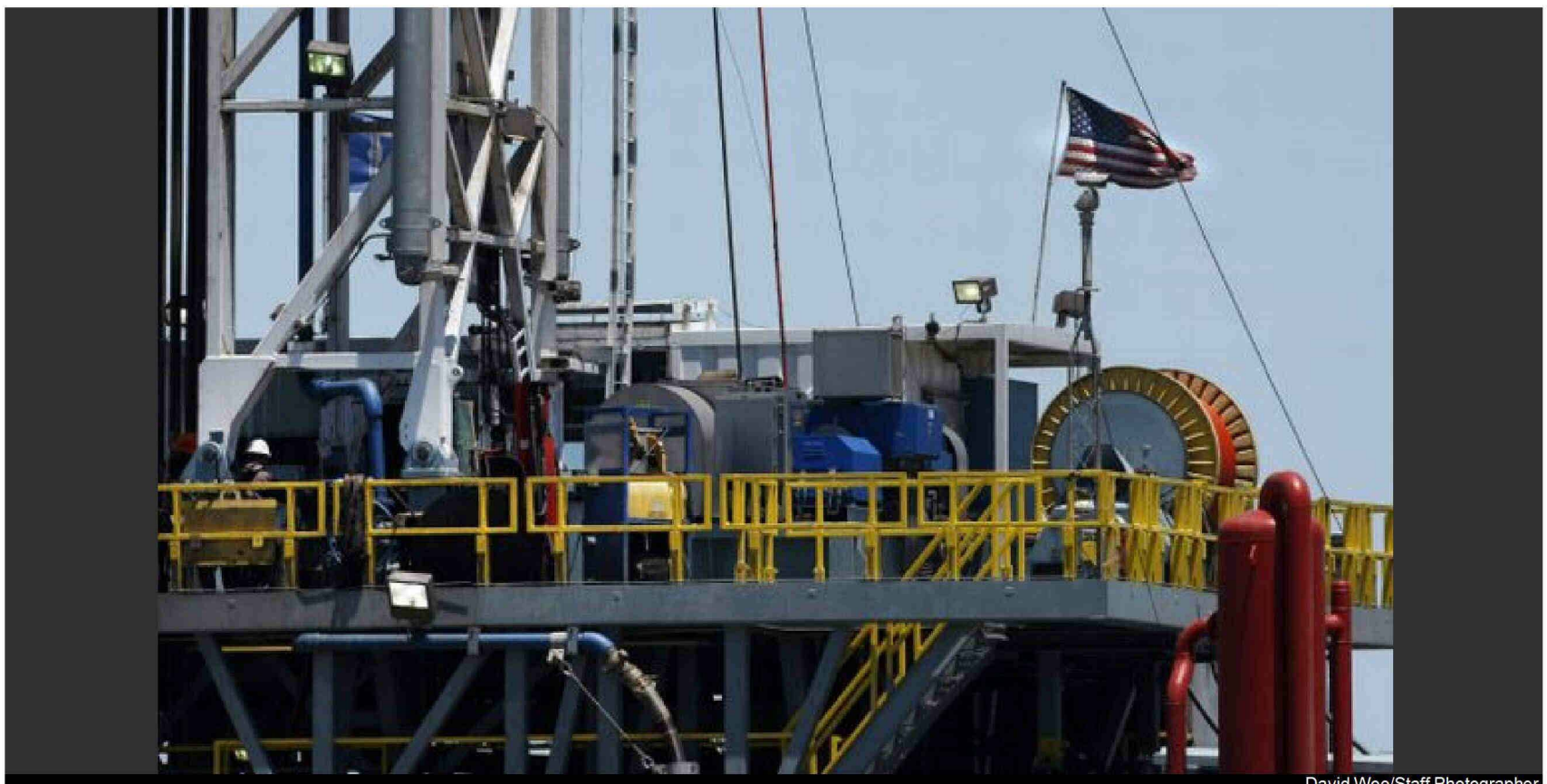
In midst of gas boom, anti-drilling movement gains ground



David Woo/Staff Photographer

Helmerich & Payne is drilling for gas in Mansfield. Since 2003, 15,675 gas wells have been drilled and fracked across North Texas.

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Analysis

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Until last spring, the Knoll family of Bartonville was living the sort of life that most people would have gladly swapped them for. They owned a million-dollar home on a wooded two-acre lot in a neighborhood of million-dollar homes with swimming pools, perfect lawns and Lexuses in the driveways.

Then something happened that the Knolls had never anticipated when they bought their immaculate corner of the American dream.

Starting in April 2010, the land immediately behind their house was transformed, overnight, into a heavy industrial site. A seemingly endless stream of trucks rattled through the neighborhood just north of Flower Mound, carrying tons of steel and piping.

As diesel fumes, chemical odors and dust wafted through the Knolls' backyard, a towering, 14-story gas-drilling rig went up. After the well was drilled, more diesel-driven equipment was brought in to fracture or "frack" the well — pumping several million gallons of highly pressurized, chemical-laden water into it to help release the gas.

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The Knolls, whose house was roughly 600 feet from the Gulftex-operated rig — and a mere 800 feet away from a “smelly, noisy” compressor station — were horrified. They complained to state environmental officials of odors, contaminated water in their well, numbing headaches, nosebleeds, and even grasshoppers falling dead from the sky into their backyard.

Their experience was not unique, and not unfamiliar to many people who have been living in North Texas for the last decade.

The Knolls’ house is situated squarely over the Barnett Shale, a massive rock formation more than a mile below the surface that has spawned one of the biggest bonanzas in the history of the oil and gas business. Since 2003, 15,675 gas wells have been drilled and fracked all across North Texas — some 2,000 in Fort Worth alone, in the process helping to drive down the price of natural gas from roughly $13 per million cubic feet in 2005 to a steady $4 today.

But the Barnett Shale boom was not, like all other Texas oil booms that went before it, simply about prodigious energy production. It was also about a collision, for the first time on this scale, between well-drilling and gas pipelines and dense urban and suburban settlement. Instead of such remote places as the Permian Basin, drilling is now proliferating in Fort Worth, Flower Mound, Grapevine, Arlington and other cities.

“One of the things that distinguishes Texas and the Barnett Shale is just how close drilling is to neighborhoods, schools, churches,” says Luke Metzger, executive director of Environment Texas. “A lot of the drilling in other states is out in forests or public lands. Here. we are talking literally in peoples’ backyards.”

And though thousands of Texans have made money from leasing their mineral rights to the drillers, there are more and more citizens like the Knolls — who do not own mineral rights under their land — who are not happy about the new gas rush.

In the past 18 months, complaints of thousands of property owners in Texas and other shale-gas states have given rise to a powerful anti-drilling movement whose main issues involve water and air pollution and whose principal target is the technique of hydraulic fracturing.

That, in turn, has spawned a larger debate about the trade-off between an obvious benefit — lots of cheap gas, which powers electric generators and provides feedstock for the petrochemical industry — and the comfort and welfare of Americans who live in proximity to its production.

That debate has landed, for the first time, in Dallas, which has so far allowed no drilling at all.

In 2007, the city began leasing public land for drilling. Dallas signed agreements with drillers worth some $33 million. For a while, it all seemed like the sort of win-win situation that has earned Fort Worth $138 million since 2004.

Then the environmental climate changed, not just in Texas but in other shale gas states like Pennsylvania and New York. In response to lobbying by neighborhood groups, Dallas last year suspended issuing drilling permits to companies such as XTO Energy and Trinity East. Though only a slice of the city — its far western section — overlies the Barnett Shale, there is still the potential for hundreds of wells to be drilled in proximity to neighborhoods.

Last week Dallas began soliciting applications for a task force whose goal will be to rewrite the city’s drilling ordinances.

Raising their voices

By suspending gas drilling, Dallas has done what a growing list of other cities and states, mostly in the huge Marcellus Shale that underlies New York, Pennsylvania and Maryland, have done within the past 18 months.

In November, the state of New York placed an official moratorium on most gas drilling. Maryland has issued no new drilling permits since 2009. Pittsburgh and Philadelphia have banned the practice, as have several smaller towns in Pennsylvania. In the Barnett Shale, the movement is finally starting to take hold, too. Both Bartonville — where the Knolls live — and Southlake have suspended issuing drilling permits.

Why, after drilling so many shale-gas wells, is everyone suddenly so spooked by gas drilling? The simple answer is that in the last two years there have been a series of highly publicized spills and well contaminations around gas drilling operations.

These in turn have led to both academic and congressional studies of the practice of hydraulic fracturing that have received wide attention in the press. Last year the Oscar-winning documentary *Gasland,* which purported to be an expose of fracking, showed residents of a Colorado shale-gas town lighting their drinking water on fire. Though the oil and gas industry strenuously denied any connection between fracking and such contaminations, *Gasland* became a rallying point for the anti-drilling movement.

Fracking involves pumping millions of gallons of water, sand and chemicals (many of them hazardous to human health) under extremely high pressure into shale rock between 6,500 and 8,500 feet below the surface (in the Barnett), creating fissures in the shale to allow the gas to escape. Each well uses up to 2 million gallons of this chemical slurry. Gas wells also employ the technique of horizontal drilling, by which operators can drill up to a mile away from the drill site.

Most of that chemical soup returns to the surface, where it is put in pits or stored in tanks until it can be hauled away. In Texas, fracking fluids are disposed of underground in deep “injection” wells. Critics charge that these fluids can migrate under high pressure and pollute aquifers. The industry argues that because fracking occurs at such extreme depths — in general a mile or more below the water table — there is no way that the chemicals can enter the water table, which lies a few hundred feet underground.

Indeed, no fracking fluids have ever been detected in aquifers and wells, though a surface spill in April on a Chesapeake drilling site near Canton, Pa., spewed thousands of gallons of fracking water onto the ground, some of which reached a creek.

PR problems

But the main public relations problems for the gas industry actually involve the gas itself, which flows strongly — invisible and odorless — up the well bore after the fluids are removed, and the air pollution that accompanies the drilling process. Here, too, the industry has denied that there is any way for methane gas to contaminate water wells.

The public relations problem, from the industry’s point of view, is the growing list of cases of apparent contamination. Most involve water. Two of the most prominent occurred in Dimock township, Pa., and in Parker County, west of Fort Worth.

In Dimock, residents began to complain of polluted wells in 2008. On New Year’s day 2009, a drinking-water well exploded. Others told of foul-smelling tap water the color of cider. In 2009, the Pennsylvania Department of Environmental Protection found that the Cabot Oil and Gas company was responsible for polluting 18 wells with methane, and cited “faulty drilling practices.” (No fracking liquids were found in well water.) Under a settlement in 2010, Cabot agreed to pay homeowners $4.1 million and provide treatment systems for their well water. A lawsuit is still pending.

Dimock's experience became the driving force in New York state's decision to suspend drilling.

In 2010, Parker County, Texas, offered another apparent case of well-water contamination. In response to complaints from residents, the federal Environmental Protection Agency found that natural gas from drilling had contaminated a drinking-water aquifer, putting two homes at risk of explosion. This triggered a federal emergency order under which the driller, Range Resources, had to take steps to protect water supplies.

As in many cases dealing with drilling, the science is imprecise at best and often the subject of controversy. In Parker County, the Texas Railroad Commission, which regulates drilling in the state, sharply disagreed with the EPA, issuing a later finding that the source of the methane was not the Range wells.

"This is a case where from all of the information to date the EPA overstepped its authority and just stepped in and alleged that Range was responsible for that methane," says Ed Ireland, executive director of the Barnett Shale Energy Education Council, an industry group. "The Railroad Commission found that those water wells were drilled into some shallow natural gas formations."

Nevertheless, a study by Duke University in May that examined 68 wells in Pennsylvania and New York, found methane levels 17 times higher in water wells near gas drilling sites than in normal wells. Such conclusions, it should be noted, do not link the practice of fracking, which takes place at great depths, to well contamination near the surface. They do not explain exactly how the drilling might have caused the water pollution. They also do not take into account that methane also occurs naturally in many water wells.

"If you look at the study, there was methane in most of the wells they tested," says Ed Ireland, "even in wells that were not near Marcellus wells. To me all this study says is that they found a correlation between areas that had methane in them and methane in water wells. That is most likely true anywhere."

Then there is the question of air pollution, both in the form of "fugitive" methane from the well bore and emissions from diesel engines and from chemicals used in the drilling process. A 2009 study by Southern Methodist University professor Al Armendariz, now the regional EPA administrator, found that natural gas production contributes more to smog in Dallas-Fort Worth than all of the cars and trucks in the area.

Another study, by Cornell University, showed high levels of gas escaping from the well-bore during the fracking process. While those numbers have been challenged by the gas industry, and by other academics, there is general consensus that a significant amount of natural gas does escape in the process. Yet another study, by the TCEQ, found airborne benzene, a carcinogen over the long term, in 20 percent of 94 test sites of wells and compressor stations in North Texas. But only at two of those sites was immediate remediation deemed necessary.

The anti-drilling movement is beginning to have an effect on the natural gas industry, which has had to slow down and even cancel some projects. XTO Energy, owned by Exxon Mobil Corp., halted plans to drill in Southlake, and after paying millions of dollars to lease city land, now must wait for Dallas to rewrite drilling ordinances. Cheasapeake Energy Corp.'s chief executive practically begged journalists at a recent convention to stop writing that fracking contaminates drinking water. And Range Resources general counsel David Poole said if Pennsylvania ever halts drilling, Range would be out of business.

Shortage of evidence

In spite of such piecemeal evidence, Dallas faces the same problem everyone else does: a frustrating lack of hard, conclusive scientific evidence about the practice of gas drilling and hydraulic fracturing. While there is no evidence that the original and greatest fear of environmentalists — that fracking liquids would pollute aquifers — there is mounting evidence that drilling may affect water sources by exposing them to methane, among other things. The drilling and fracking of gas wells, undebatably, causes air pollution.

A major EPA study on the subject is due next year, and many are hoping it will sort out these problems.

But that offers little comfort to people like the Knoll family of Bartonville, who now have seven wells within a half mile of their home. Though their complaints helped lead Bartonville to suspend gas drilling, and though they have filed a lawsuit against Gulftex Operating Co. and other drillers, they continue to live with the noise of a recently fracked well and a compression station just behind their property.

They still don't understand how their well became polluted, and tests run by the TCEQ proved inconclusive. "We noticed back in early June last year that when we would spray water from our hose it would foam," says Susan Knoll, who has videos and photographs of the event. "It looked like somebody had put shampoo in it." The water was full of this substance like paraffin. She says that, after they saw *Gasland*, they succeeded in setting the water on fire. The contamination persisted from June to September.

"All we can do is share what we have learned with other people," says Knoll, who with her husband now attends every Bartonville council meeting. "And that is what we are doing."

The Denton Record-Chronicle contributed to this report.